

**Vectron International****Filter specification****TFS 1068****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	50 Ω	
Output:	50 Ω	

**Characteristics**

## Remark:

The maximum attenuation in the pass band is defined as the insertion loss  $a_e$ . The nominal frequency  $f_N$  is fixed at 1068 MHz without any tolerance or limit. The values of absolute attenuation  $a_{abs}$  are guaranteed for the whole operating temperature range. The frequency shift of the filter in the operating temperature range is included in the production tolerance scheme.

<b>D a t a</b>		<b>typ. value</b>		<b>tolerance / limit</b>		
<b>Insertion loss</b> (reference level)	$a_e$	3,0	dB	max.	3,5	dB
<b>Nominal frequency</b>	$f_N$	-			1068	MHz
<b>Centre frequency</b>	$f_C$	1068	MHz		-	
<b>Passband</b>	PB	58	MHz	$f_N \pm$	20	MHz
<b>Pass band ripple</b>		0,8	dB	max.	1,2	dB
<b>Bandwidth</b> 1,2 dB	BW	58	MHz	min.	40	MHz
<b>Absolute attenuation</b>	$a_{abs}$					
0,3 MHz ... 900 MHz		53	dB	min.	50	dB
900 MHz ... 950 MHz		50	dB	min.	40	dB
1150 MHz ... 1190 MHz		30	dB	min.	20	dB
1190 MHz ... 1270 MHz		50	dB	min.	25	dB
1270 MHz ... 1400 MHz		45	dB	min.	40	dB
1400 MHz ... 1800 MHz		42	dB	min.	30	dB
<b>VSWR</b>		-		max.	2 : 1	
<b>Input power level</b>		-		max.	15	dBm
<b>Operating temperature range</b>	OTR	-			- 40 °C ... + 85 °C	
<b>Storage temperature range</b>		-			- 40 °C ... + 85 °C	
<b>Temperature coefficient of frequency</b>	$TC_f$ *	-72	ppm/K			

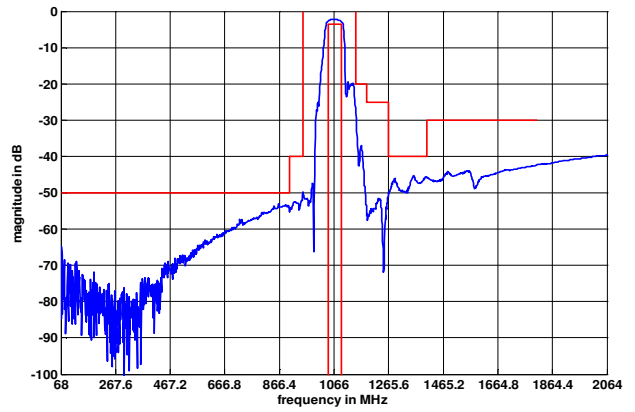
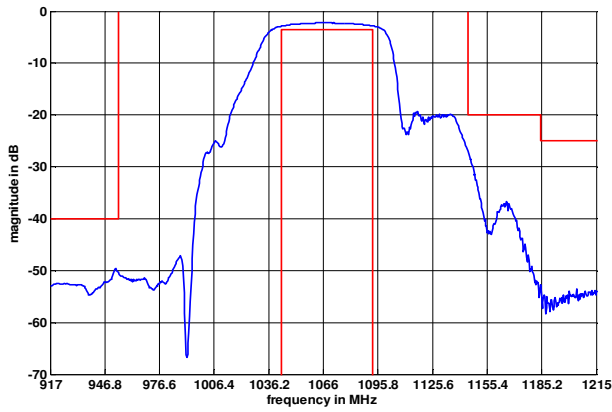
\*)  $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T_0}(\text{MHz})$

**Generated:****Checked / Approved:**

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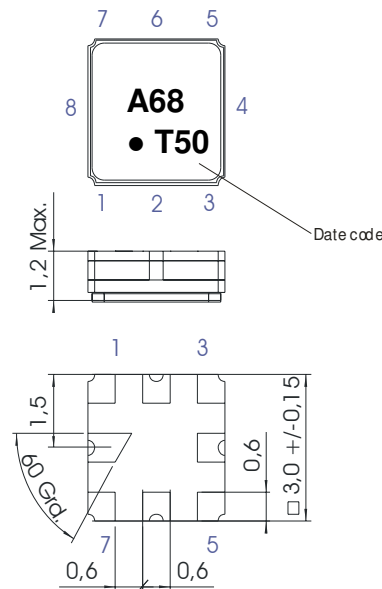
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**Filter characteristic**



**Construction and pin connection**

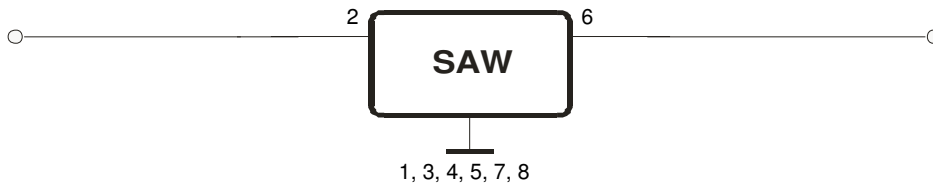
(All dimensions in mm)



- 1 Ground
- 2 Input
- 3 Ground
- 4 Ground
- 5 Ground
- 6 Output
- 7 Ground
- 8 Ground

Date code: Year + week  
 T 2005  
 U 2006  
 V 2007  
 ...

**50 Ω Test circuit**



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**Stability characteristics, reliability**

After the following tests the filter shall meet the whole specification:

1. Shock: 500g, 1 ms, half sine wave, 3 shocks each plane;  
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 0,35 mm or 5 g respectively, 1 octave per min, 10 cycles per plan, 3 plans;  
DIN IEC 68 T2 - 6
3. Change of temperature: -55 °C to 125°C / 30 min. each / 10 cycles  
DIN IEC 68 part 2 – 14 Test N
4. Resistance to solder heat (reflow): reflow possible: twice max.;  
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

This filter is RoHS compliant (2002/95/EG, 2005/618/EG)

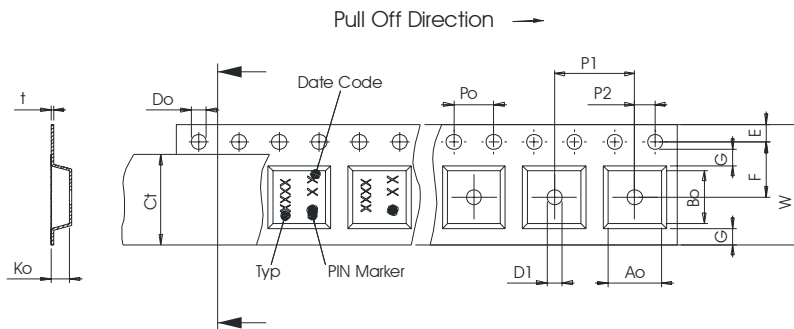
**Packing**

Tape & Reel: IEC 286 – 3, with exception of value for N and minimum bending radius;  
tape type II, embossed carrier tape with top cover tape on the upper side;

max. pieces of filters peer reel:	9000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

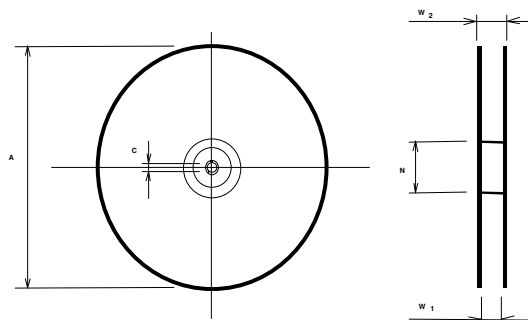
**Tape (all dimensions in mm)**

- W : 8,00 ± 0,3
- Po : 4,00 ± 0,1
- Do : 1,50 +0,1/-0
- E : 1,75 ± 0,1
- F : 3,50 ± 0,05
- G(min) : 0,75
- P2 : 2,00 ± 0,05
- P1 : 4,00 ± 0,1
- D1(min) : 1,50
- Ao : 3,25 ± 0,1
- Bo : 3,25 ± 0,1
- Ct : 5,5 ± 0,1



**Reel (all dimensions in mm)**

- A : 330
- W1 : 8,4 +1,5/-0
- W2(max) : 14,4
- N(min) : 50
- C : 13,0 +0,5/-0,2



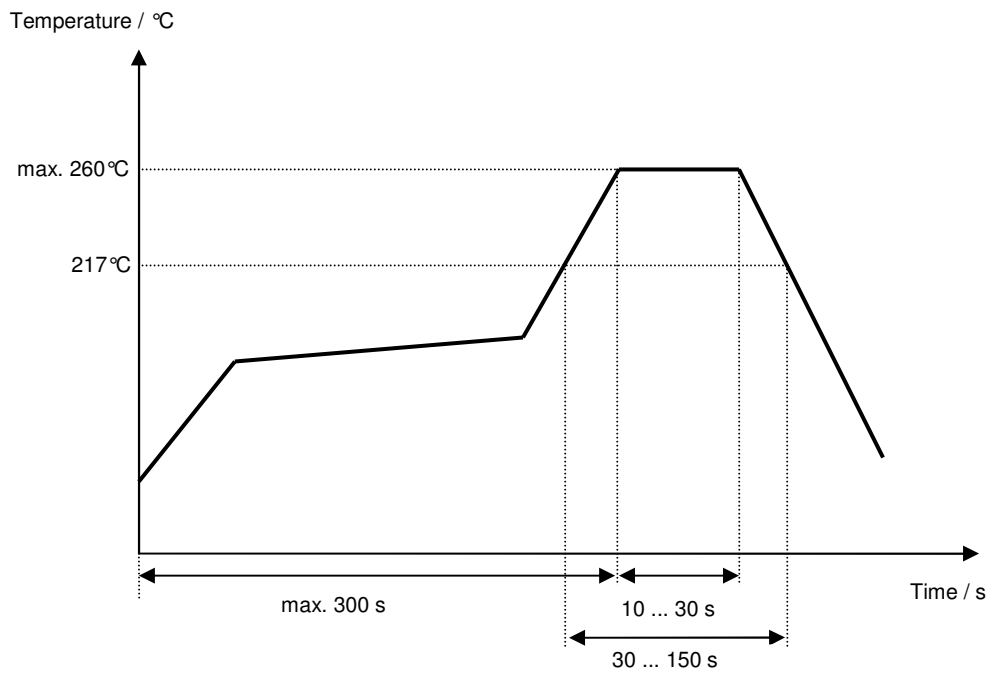
The minimum bending radius is 45 mm.

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**Air reflow temperature conditions**

<b>Conditions</b>	<b>Exposure</b>
Average ramp-up rate (30°C to 217°C)	less than 3°C/second
> 100°C	between 300 and 600 seconds
> 150°C	between 240 and 500 seconds
> 217°C	between 30 and 150 seconds
Peak temperature	max. 260°C
Time within 5°C of actual peak temperature	between 10 and 30 seconds
Cool-down rate (Peak to 50°C)	less than 6°C/second
Time from 30°C to Peak temperature	no greater than 300 seconds

**Chip-mount air reflow profile**

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**History**

<b>Version</b>	<b>Reason of Changes</b>	<b>Name</b>	<b>Date</b>
1.0	Generation of development specification	Strehl	13.05.2005
1.1	Add typ. value and filter characteristic Change stability characteristic Generation of filter specification Add max. VSWR	Strehl	14.12.2005